

NOTES ON SOME NEW AND INTERESTING
BUTTERFLIES CHIEFLY FROM BURMA.

BY

MAJOR-GENERAL SIR HARRY TYTLER, K.C.B., C.M.G., C.I.E., D.S.O.

PART II.

[Owing to the death of the author, the manuscript of this part has been edited by Mr. G. Talbot, F.R.E.S., who has also corrected the proofs of both parts.—*Ed.*].

NYMPHALIDÆ.

Charaxes fabius nagaensis, s.sp. nov.

Male: differs from the typical form before me from Chota Nagpore, and the United Provinces, in being larger, and in having the yellow macular band narrower and spots smaller; it is as large as the Ceylon form *Ch. fabius cerynthus*, Fruh. but the yellow macular band is paler; it differs from *Ch. fabius sulphureus*, Rothsch. in being larger, with the macular band darker.

A large series of males was taken at Nichuguard at the foot of the Naga Hills; a female was taken in the Lushai Hills.

Further south-west, in the Chin Hills, a male of *Ch. fabius sulphureus*, Rothsch. was taken. I have not taken the latter farther north than Bhamo; it occurs more commonly further south in S. Shan States and in the Karen Hills.

♂ and ♀ paratypes are deposited in the British Museum.

Eriboea narcea thawgawa, s.sp. nov.

This form is very close to *E. lissainci*, Tytl. from the Naga Hills, and to *E. aborica*, Evans. In size it is equal to the latter. On the *upperside* it agrees with *aborica*, Evans in having on the forewing the dark submarginal band as broad, but the pale spots are much larger. On the hindwing it differs in lacking the pale line in the middle of the post-discal black band from the tornus to v. 4. On the forewing the submarginal spots have rounded apices, in interspaces 1, 2 and 3, instead of being pointed.

From *E. lissainci*, Tytl., it differs on the *upperside* in the black border to the forewing being broader, and the pale spots rather larger. On the hindwing there is no trace of the pale brown edging to the discal band which shows through from the underside. It is not rare, and a large series of males was taken at Htagaw at the end of June.

A ♂ paratype is deposited in the British Museum.

Eriboea eudamippus nigrobasalis, Lathy.

Brig. Evans, in his 'List of Indian Butterflies,' gives the range of *E. e. eudamippus*, Doubl. as Kumaon-Assam; of *E. e. nigrobasalis*, Lathy as N. Burma; and of *E. e. jamblichus*, Frubst. as Karens—S. Burma.

The type of *E. e. nigrobasalis*, Lathy came from Pak-a-jong, Siam. I have not seen the original description nor have I seen the type, but according to Lord Rothschild and Dr. K. Jordan, (*Novitates Zoologicae*, vol. vi, 1899, pp. 266-267), the type has the cell of forewing all black and the abdomen above *pale yellow*.

Lord Rothschild and Dr. Jordan include specimens from the Shan States in this subspecies, but at the same time note that these specimens have *black* bodies and state 'It appears singular that in the specimens from Pak-a-jong the abdomen is *pale yellow* as in *E. eudamippus*'.

I have a fairly large series of *E. eudamippus* before me and note the following differences amongst the geographical forms:—

Specimens as far east as Assam, Naga Hills and Manipur, and at Sadon, extreme N.-E. Burma, are the same as those from Sikkim, i.e. typical *E. e. eudamippus*, Doubl.

At Htawgaw, which is considerably to the south of Sadon, a *large* form occurs with cell and base of forewing entirely black, and base of hindwing yellow; the marginal area of hindwing is not clear yellow but dusted with dusky bluish. Two males were taken in June (wet season). I propose calling this form *splendens*, s.sp. nov.

Further south, at Maymyo, N. Shan States, a slightly different form occurs; two specimens taken in June and September (wet season) are very much smaller, and in addition to having the cell and base of forewing black, the base of the hindwing is also black. Two specimens taken at the same place, one in February (dry season) and the other undated, but probably a dry season form, are slightly larger; the body and cell of forewing are black, but the cell has a small pale diffuse spot in it, and the base of both wings is only slightly dusted with black. The marginal area of hindwing is clearer yellow than the above form *splendens*, Tyt.

From further south and east I have received two specimens from Loimwe close to the Siam border, taken in July (wet season), which are very similar to the form from Maymyo with cell and base of forewing entirely black, and with a slight dusting of black on base of hindwing. Still further south, of ten males and one female from the Karen Hills, two have the cell and base of forewing entirely black, and the remainder have the cell black with a large whitish suffused patch against the lower edge of the cell; these have the base of the forewing only slightly dusted with black, and one male and the female have no dusting of black at all. The abdomen of all these is *greyish yellow*, in only one is it *pure yellow*. The late Mr. G. E. R. Cooper informed me that still further south, in the Dawna Range, in the dry season; he has taken both *black-bodied* forms and *greyish yellow-bodied* forms but at different elevations.

It would appear that the Karen Hills form is very close to *Eriboea e. nigrobasalis*, Lathy, but without seeing the type I am unable to say whether they are identical or not; but the black-bodied forms from Maymyo and Loimwe are certainly not *nigrobasalis*, Lathy and will require a new name. I propose the name *chota*, s.sp. nov. for this form. Type ♂, Maymyo.

Eriboea eudamippus jamblichus, Fruhst.

The type is given as from Tenasserim, but without further precise locality; Fruhstorfer, in his description, states:—

'Males from Tenasserim in my collection are smaller than males of the dry season period from Sikkim, and do not show any blue bordering at all on the proximal part of the submarginal catenary band of the hindwings which is copiously provided with very large pupils.'

I have seen no Karen Hills nor Dawna Range specimens which agree with this description, but I have seen specimens from Tavoy and Mergui, in the late Mr. G. E. R. Cooper's collection, which do agree, and it seems probable that *E. e. jamblichus* only occurs in the extreme south of Burma.

Apatura cooperi, Tytler.

There are two broods of this insect; the spring brood, flying in May and June, and the autumn brood, in October and November. The latter seasonal form is the more plentiful.

The two forms do not differ.

Apatura ulupi kalawrica, Tytler.

There are two broods of this form; the spring form, flying in May and June, and the autumn form, in September and October.

A male taken at Maymyo is a melanic aberration with the yellow markings dusted with black.

***Apatura ulupi mai*, s.sp. nov.**

A single male taken at Loimwe, S. Shan States, differs from *Ap. ulupi florenciae*, Tytl. as follows:—

Upperside: darker brown and not so tawny. Forewing with all the yellow markings smaller and more round. Hindwing with all the yellow markings very small and indistinct; a well defined row of macular terminal yellow spots as in *Ap. u. florenciae*, Tytl. but darker; the subterminal row of blackish spots obsolescent and very indistinct. Apex of forewing and tornus of hindwing much blunter and not nearly so much produced. The differences are well marked and although only a single male was taken, I consider it is a good local race. Its occurrence at Loimwe extends the range of the collective species a considerable way to the east. It appears to be very rare.

***Apatura parvata burmana*, s.sp. nov.**

Male: Larger than *Ap. parvata*, M., from Bhutan and the Naga Hills, of which I have a large series before me.

Upperside: darker, with yellow markings more distinct; the band on the hindwing much broader and better defined.

Underside: darker, all black markings more defined; discal band broader as on upperside.

Hindwing: tornus more produced.

Six males were taken at Htaungaw and Sadon, N.-E. Burma, from June to September.

A ♂ paratype is deposited in the British Museum.

***Euripus halitherses*, Doubl.**

Brig. Evans gives four forms of females, namely:—

♀ *v. isa*, M. as typical form; outer half upper hindwing brown.

♀ *v. nyctitius*, Db. Upper forewing dark brown with apex broadly suffused bluish. Upper hindwing all dark brown.

♀ *v. cinnamoneus*, W.-M. As last, but upper hindwing outwardly with white streaks.

♀ *v. alcatheoides*, de N. As *nyctitius* but upper forewing all dark brown.

In the large series of females before me I notice the following subdivisions:—

♀ *f. isa*, M. *1st form*: typical. *2nd form*: hindwing very white, almost extending over the whole wing. *3rd form*: as 2nd form, but darker and white area, which extends to termen, well-defined with brown streaks along the veins.

♀ *f. cinnamoneus*, W.-M. *1st form*: white streaks on hindwing restricted to the terminal area. *2nd form*: white streaks more extensive, and produced inwardly to the discal area. *3rd form*: as in 2nd form but apex of forewing suffused with violet.

***Penthema lisarda*, Doubleday.**

Fruhstorfer gives the range of this species as Sikkim to Assam, and that of the form *T. mihintala*, Fruhst. as the Chin Hills.

Brig. Evans extends the range of the species to Manipur, probably based on specimens taken by myself, 1911-1914.

Fruhstorfer separated the form from the Chin Hills as being larger than Sikkim forms, the colour of the underside being dull brown and not red brown, and the spots in the cell being rounder and the internervular strigae broader.

I have a large series of forms taken in the Abor Hills, foot of the Lushai Hills bordering on Cachar, Manipur and N.-E. Burma; also one male from the Arrakan Hills which agrees with Fruhstorfer's description of his *mihintala*.

All the other forms are intermediate in varying degrees between typical *lisarda*, Db. and *mihintala*, Fruh., those from the foot of the Lushai Hills being closer to *lisarda*, and those from Manipur and N.-E. Burma being closer to *mihintala*.

I have only one specimen before me from the Arrakan Hill tracts but have seen several in Mr. Cooper's collection; he kindly gave me the specimen referred to; this form is constant in the shade of colouring on the underside.

The occurrence of the collective species to N.-E. Burma extends its range considerably to the east.

Penthema darlisa, Moore.

The type came from the Thounguen forests in Upper Tenasserim.

Further North, in the Karen Hills and at Maymyo, Northern Shan States, a modified form occurs which appears to be constant. It differs in the following respects:—

Male and female. *Upperside*. Forewing with a long bluish-white streak in interspace 1, not broken into two spots as is generally the case in the typical form. *Hindwing* with discal row of spots not touching the internal streaks except in interspace 2; a round detached spot placed inwards to the discal spot in interspace 6, in the typical form replaced by a discal streak touching the outer spot.

Underside. As on upperside but discal spots on hindwing very small.

I propose the name **shania**, s.sp. nov. for this form.

To the south, in Tavoy, a very large and distinct form occurs.

Male and female. *Upperside* with all white markings large. Forewing with a long streak in interspace 1. *Hindwing* with discal streaks broad, and coalescing with the discal spots, forming one uninterrupted streak. *Underside*, as upperside except that some of the discal spots in 4, 5, 6 and 7 are sometimes clear of the discal streaks.

I propose the name of **cooperi**, s.sp. nov. for this race.

The late Mr. G. E. R. Cooper found this form as Kanbank, Tavoy, and kindly gave me a pair.

Penthema binghami, W.-M.

The late Mr. G. E. R. Cooper, in his large series, had several interesting forms of *binghami*, some of which were intermediate between the various named forms:—

(a) *The typical* form from Dawnas with small spots on fore and hindwings.

(b) *P. binghami merguia*, Evans, from Ataran Valley, with spots on forewing small and discal streaks on hindwing joined to terminal spots.

(c) An intermediate form, from Hangatharaw, in which the spots on forewing are the same as (b) but much larger than in (a); the two discal streaks near the tornus are joined to the submarginal spots.

Euthalia flora cooperi, s.sp. nov.

Specimens of *E. flora*, Butl., taken by the late Mr. Cooper in the Ataran Valley, have the borders on the upperside pinkish-violet and not blue, and are very close to the form of *salangana*, Fruh., which occurs on the Western Coast of Siam opposite the Nicobars, the only difference being that the border is not so broad. Typical *E. flora andersoni*, M. has a blue border, and occurs further south.

It is better to consider *E. andersoni* as a race of *E. flora*, Butl. than of *E. lepidea*, M.

Euthalia julii anisakani, s.sp. nov.

Male: Wet season form very like *Eu. julii xiphiones*, Butl. on the upperside, but on the underside the two discal rows on forewing are rather farther apart, and the inner spot in 4 is not so bent outwards and out of line.

The dry season form is much smaller and paler. Female. *Upperside* rather similar to *E. julii adima*, M. female. *Underside* very similar to the female of *E. julii xiphiones*, but as in the male the two brown discal lines are rather further apart, and the inner spot in 4 not so outwardly thrown out of line and so placed further from the outer spot.

A male and female of the autumn form, taken in December, is as large and dark as the w.s.f., but all the markings on the underside are obliterated.

Types: male and female, Anisakan, N. Shan States. Several specimens were also taken in Maymyo.

Euthalia kesava maymyoensis, s.sp. nov.

Types: Male and female. Maymyo, N. Shan States.

Erig. Evans gives the habitat of *E. kesava kesava*, M. as Assam—N. Burma and of *E. kesava discipilota*, M. as Bhamo—S. Burma. Besides males before

me I have a female from Bhamo and one from the Upper Chindwin which are certainly not *discispilota*, M.; the female is quite different.

The male is similar to *E. kesava kesava*, M. and to *E. kesava discispilota*, M.

Female. Much smaller than the former and slightly so than the latter. It is nearer to *E. kesava kesava*, M. than to *E. kesava discispilota*, M., but differs from the former as follows:—

On the *upperside* both wings with discal grey area extending well over the submarginal line; submarginal line not so crenulate.

Underside: submarginal line as on upperside. The specimen taken on the Upper Chindwin is not typical but nearer to this form than to *E. kesava kesava*, M. Specimens of the ♀ taken at Sadon, N.-E. Burma, are typical *E. kesava kesava*, M.

Euthalia eriphylæ, de Nicév.

There has been a good deal of confusion regarding de Nicéville's insect.

Bingham placed it under *Euthalia apicalis*, Voll., and Brig. Evans considered it to be a race of *Eu. merta* M.

E. eriphylæ de N., according to Fruhstorfer, was based by de Nicéville on males of two different species, namely true *Eu. eriphylæ* de N., figured by de Nicéville himself, and on *E. apicalis*, Voll., or rather on *Eu. merta*, M., the Tenasserim form of *apicalis*, Voll.

According to Bingham de Nicéville described and figured the female of *Eu. eriphylæ*, erroneously as *Eu. binghami*, de N. This statement I do not consider to be correct as de Nicéville's fig. of *Eu. binghami* does not agree with a large series of females of *Eu. delmana*, Swinh., the Assam form of *Eu. eriphylæ*, de N. (the Burma form) and which are undoubtedly the females of that species.

The females of *Eu. eriphylæ delmana*, Swinh. can easily be recognised by the shape of the submarginal dark band on the upperside of the forewing; this band is *not* parallel to the termen but inwardly bent in the middle in the same way as it is in the male. de Nicéville's fig. of the male clearly shows the shape of this band.

So de Nicéville's figure and determination of the female of his *binghami* must be assumed to be correct until proved to the contrary.

Eu. merta, M. is a distinct species and has nothing to do with *Eu. eriphylæ*, de N.

The males of *Eu. eriphylæ*, de N., dry season form, differ from the dry season form of *Eu. delmana*, Swinh. in having the apex of the forewing and tornus of the hindwing more pointed. The *upperside* is not so dark and all the pale markings are still paler, especially along the termen of both wings. The pale terminal area of the hindwing has a series of detached dark spots, whereas in *delmana* these spots coalesce and form a continuous dark brown band. *Underside* darker, otherwise the same.

Female. The single d.s.f. ♀ of *Eu. eriphylæ*, de N. in the British Museum, taken at Pattechaung in the Karen Hills in March 1926, and kindly sent to me on loan for examination, differs considerably from the d.s. forms of *delmana* now before me from the Naga Hills.

Upperside. Much paler; the white sub-apical markings of forewing nearly pure white instead of being sullied or pale brown; submarginal band on hindwing slightly paler on its inner edge, and inwardly the crescents are more pointed.

Underside very pale; the bluish suffusion which almost covers the hindwing is carried into the base of the forewing and into the cell. In *delmana* this bluish suffusion is confined to the lower half of the hindwing and does not extend to the forewing except slightly into the cell.

The wet season males of *delmana* are darker above than the dry season forms, and all the dark markings below are more prominent.

The wet season females are much darker above; the underside is also darker and the bluish suffusion is more vivid.

In the British Museum there is a fair series of dry season males and one female of true *E. eriphylæ*, de N., from Lower Burma, and two males and one female of *Eu. delmana*, Swinh., including ♂ and ♀ types from the Khasi Hills.

Of *Eu. delmana*, Swinh., there are before me, in my collection, four males and five females of the wet season form and thirteen males and six females of the dry season form. It is very rare in the Naga Hills and apparently also rare in the Khasi Hills.

Eu. eriphyle, de N., also appears to be very rare in Lower Burma.

Two males and a female from the Naga Hills have been deposited in the British Museum.

Euthalia duda amplifascia, s.sp. nov.

Male: *Upperside* with white discal band on both wings very much broader than in the typical form, as broad as in *D. durga*. Forewing with discal band continuous and not macular as in *D. duda*, Stgr. *Underside* with ground-colour and all markings darker.

The type was taken at Sadon, N.-E. Burma, at about 6,000 ft., in July.

Euthalia durga splendens, Tytler.

Two specimens of this very rare form were taken at Sadon, N.-E. Burma, in July, at about 6,000 ft.

Euthalia nara, Moore.

Moore's type was described from Sikkim; the collective species extends over a large area and is represented by local forms as far East and South as the Shan States, Burma.

Evans, in his *Ident. Ind. Butt.*, has separated the form from Loimwe, S. Shan States, under the name *shania*, based on the colour of the male which he describes as bright dark green instead of bronzy olive-green as in Sikkim males. He does not mention the female.

The males of the various local races are hard to describe in writing but can readily be seen when series of each form are placed side by side. The females, however, are different, and easily distinguishable.

I propose separating the form from the Naga Hills and Manipur and also the form from Kalaw in the northern portion of the S. Shan States. A single male from N.-E. Burma is again different, but until the female is found and a larger series of males obtained, it had better be placed with the Naga Hill form.

Euthalia nara nagaensis, s.sp. nov.

Male: *Upperside* darker bronzy green than Sikkim males, with all dark markings more conspicuous. Female: *Upperside* very bronzy, much more so than in Sikkim females. Forewing with discal white band narrower, especially in interspace 2, where it is very small. Hindwing with the two costal white spots obsolescent and blurred, not white and clear as in the typical form. *Habitat*:—Naga Hills and Manipur.

Euthalia nara kalawrica, s.sp. nov.

Male: *Upperside* with all dark markings more conspicuous than in the Sikkim form. Hindwing with the apical yellow patch smaller, with the discal green area dividing it in two and reaching the costa. Female: *Upperside* brighter green and dark markings more distinct, as in male. Forewing with the discal transverse white band much broader, except in interspace 2, where it is much smaller. *Habitat*:—Kalaw, northern portion of the S. Shan States.

Euthalia nara shania, Evans.

Type, Loimwe, S. Shan States.

As Evans' description, in his *Ident. Ind. Butt.*, is rather scanty, and only refers to the male, I am giving a fuller description based on a large series of both sexes.

Male. *Upperside*, as stated by Evans, brighter green. All dark markings more conspicuous than in the typical form. Hindwing with discal yellow area larger, the green discal colour just entering interspace 6.

Female. *Upperside* rather darker than the Sikkim form, with all dark markings more conspicuous. Forewing with the white discal band similar, but the spot in 2 much smaller. Hindwing with the two costal white spots, in 6 and 7, completely absent or only one minute spot in interspace 6 sometimes present.

Males are common; the females very rare.

Euthalia narayana, Gr.-Sm.

The type, a ♀, was taken in the Ruby Mines, in the Bhamo Hills.

It also occurs commonly in the Naga Hills, rarely in Manipur, rarely in the extreme N.-E. of Burma; side by side with races of *E. sahadeva*, M. it also occurs throughout the S. Shan States.

At Loimwe, in the extreme S.-E. of the S. Shan States, it occurs commonly with *E. sahadeva* which, however, is very rare.

There has been some confusion about this form, and it has been considered by some authors to be a race of *E. sahadeva*, M. As the two forms occur together over a great part of their range I think it better to give *E. narayana*, Gr.-Sm. specific rank.

This form is represented in my collection by 13 ♂♂ and 14 ♀♀ from the Naga Hills; 1 ♂ and 2 ♀♀ from Manipur; a pair from extreme N.-E. Burma; 5 ♂♂ and 4 ♀♀ from Maymyo, N. Shan States; 6 ♂♂ and 3 ♀♀ from the Kengtung State, extreme east of the S. Shan States. It is curious that both *sahadeva nadaka* and *narayana*, which occur commonly side by side in the Naga Hills, are rare in the adjoining Hills of Manipur.

Euthalia sahadeva, Moore.

The following notes are tentative and are based on 30 ♂♂ and 35 ♀♀ in my collection and now before me.

The collective species has been divided up into three subspecies:—

- | | | |
|----------------------------------|---------|-----------------------|
| <i>E. sahadeva sahadeva</i> , M. | type, ? | Bhutan; Sikkim. |
| <i>E. „ nadaka</i> , Fruh., | type, | Khasi Hills. |
| <i>E. „ narayana</i> Gr.-Sm., | type ♀, | Ruby Mines, N. Burma. |

There is no difficulty in recognising the Sikkim-Bhutan form, *E. sahadeva sahadeva*, M., in which the males have all the markings large and yellowish-white, and on the hindwing the post-discal series of six spots extending to interspace 2. The female is much larger than the male; upperside dark bronzy-green; discal band on forewing white, and hindwing with one subcostal white spot in 6.

There should also be no difficulty in recognising *E. sahadeva nadaka*, Fruh., from the Khasi Hills, which Fruhstorfer describes as ♂, on both sides darker leaf-green than specimens from further west; hindwing with *three*, instead of *six*, white discal spots.

Female, as figured by Moore, with no white spots on hindwing.

I have no males before me from the Khasi Hills, and only two females: these differ from Moore's fig. in one having one small white subcostal spot in 6 on upper hindwing and the other having three spots in 5, 6 and 7; otherwise similar to the female from Sikkim.

This form extends into the Naga Hills and Manipur where it differs slightly in the male having very occasionally one or two additional discal spots below the upper three; in the female the number of spots on the hindwing may be one or two, or they are entirely obsolescent.

Of this form there are before me 27 ♂♂ and 9 ♀♀ from the Naga Hills, and one male from Manipur.

Euthalia sahadeva thawgawa, s.sp. nov.

A third form of *sahadeva*, which I propose calling as above, occurs at Hthawgaw, N.-E. Burma. Both sexes are darker than the Naga Hills specimens, and the female is brighter green; the male has five discal spots on hindwing instead of three; the female has none.

There are also before me two females from the extreme S.-E. end of the S. Shan States; these agree with the females from Hthawgaw, but without seeing a male it is not certain whether they are the same or not. It is curious that I have received no specimens from intermediate areas, but they probably occur.

Euthalia lengba, s.sp. nov.

In the *J. B. Nat. Hist. Soc.*, Feb. 2nd, 1915, I recorded the capture of this species, in Manipur, erroneously under the name of *E. taoana*, M., which is, however, quite different.

Male. Smaller than *E. taoana*, M.

Upperside rather more yellowish, markings very similar, but discal band on forewing not so broad and spots narrower; spot in 3 not touching spot in 4. Hindwing with three post-discal spots, and one or two black white-centred spots in 3 and 4; the outer edge of these spots *convex*. *Underside* more greenish-yellow than *E. taoana*; marking very similar. In appearance it is between *E. taoana*, M., and the form of *confucius* described below.

Euthalia confucius sadona, s.sp. nov.

Male: very like *E. lengba*, Tyl., but upperside much darker green. *Upperside*. Forewing with post-discal band darker yellow; spot in 4 projecting outwards beyond spots on either side. Hindwing with three discal spots in 5, 6 and 7; no traces of spots below; spots in 5 and 6 excavated on the inner edges.

Underside. Forewing with conspicuous black subterminal band bordering the subcostal spots and reaching spot 2; inner edge of all the spots in the post-discal band edged with black; a large black area below the white spot in 2, with two small white dots in the middle. It differs from *E. confucius*, Leech, in being much smaller, with more pointed wings; the colour is much darker green on the upperside; the post-discal band on forewing is much narrower; no spot in 1. Hindwing with three post-discal apical spots.

Type ♂ from Sadon, N.-E. Burma, 16-7-1929, deposited in the British Museum. Also a male from Hthawgaw, N. Burma, 27-7-1927, in my collection.

Limenitis austenia purpurascens, Tylt.

This form occurs in N.-E. Burma as a variety of *L. austenia austenia*, M.; of four males secured, three are very close to typical *austenia*, M., and one is identical with typical *purpurascens*, Tylt., with the rosy purple colour very conspicuous.

Limenitis brunnea, s.sp. nov.

Male. *Upperside* dark brown, with paler brown discal and subterminal bands parallel to the outer margin; edges of the bands even. Forewing with a white apical spot as in *L. danava*, M. *Underside* very similar to *L. danava*, M., but darker; the outer edge of the subterminal band on hindwing even and not crenulate. Two males were taken at Konglu and Hthawgaw, N.-E. Burma. It appears to be very rare. A paratype has been deposited in the British Museum. There also are four males from Lingtsi, Bhutan, 6,500-7,500 feet, and one from the Mishmi Hills, 4,000 feet.

Limenitis zayla, Doubl.

A single male was taken at Hthawgaw N.-E. Burma. I believe this species has not been recorded from Burma.

Limenitis oberthüri rileyi, s.sp. nov.

Male. *Upperside* very similar to *Hestina oberthüri*, Leech, from W. China but all the pale grey streaks between the veins broader. *Underside* ground colour reddish-brown and not grey-brown as in *oberthüri*, Leech. Forewing

with grey markings broader as on upperside and dusted over with darker grey. Hindwing with grey markings dusted with reddish-brown, broader in the cell and in 5, 6 and 7, getting very indistinct towards the tornus where the reddish-brown colour is superimposed.

I have much pleasure in naming this species after Capt. Riley who has afforded me the greatest assistance in working out my new form from Burma. Four males were taken at Hthawgaw, N.-E. Burma, in June. A male paratype is deposited in the British Museum.

***Pantoporia sulpitia adamsoni*, Moore.**

This butterfly has, I believe, only been recorded from N. Burma, and I have taken it from Putao N.-E. Burma to Maymyo N. Shan States. I have also taken one ♂ at Pattechaung, Karen Hills. This extends its range a good deal further south. It must be very rare in the Karen Hills as Pattechaung has been systematically worked by numerous collectors.

***Pantoporia zeroca whitei*, s.sp. nov.**

A single male taken at Fort White, Chin Hills, differs considerably from typical specimens from the Naga Hills and Manipur.

Upperside. Both wings with pale bands broader and broadly edged with greyish-blue. *Underside.* Forewing: the two apical spots are very narrow; the pale band in the cell has below it three dark vertical lines connecting this area with the lower edge of the cell. Hindwing post-discal band very narrow.

It is a very beautiful and distinct looking insect.

***Pantoporia opalina shan*, s.sp. nov.**

Male and female differ from *P. opalina orientalis*, El., from the Khasi and Naga Hills, in being smaller; the markings on the upperside are pure white and not sullied; the white spot beyond the apex of cell of forewing, blunt and short, not long and narrow and pointed. On the underside the terminal and dorsal area of the hindwing not washed with violet as in *P. orientalis* and *P. opalina opalina*, Koll., from the N.-W. Himalayas.

It occurs commonly in the Northern and Southern Shan States.

Types, male and female from Maymyo. From the extreme N.-E. Burma there is before me a male which agrees with true *P. orientalis*, El., from the Naga Hills and Assam. ♂ ♀ paratypes are deposited in the British Museum.

***Pantoporia punctata*, Leech.**

Four males of this species were taken in Hthawgaw, N.-E. Burma, in June. They only differ from Leech's figure in having the discal patch on the hindwing much larger.

This is an interesting capture as it has not been recorded within Burmese limits before.

***Pantoporia jina jinoides*, Moore.**

A large series was obtained at Sadon N.-E. Burma. Some of the specimens were hardly separable from *P. jina*, M.

***Neptis sankara guiltoides*, s.sp. nov.**

Male and female differ from *N. guiltya*, Swinh., in having all the bands on the upperside purer white and not sullied with brown; the markings on the underside are broader, especially the submarginal pale band of the hindwing.

Numerous specimens of both seasonal forms were taken at Maymyo, N. Shan States; and also in the Karen Hills. Two females taken in August and October differ from others taken in October in the pale markings on the upperside being tinged with yellow, as is sometimes the case with *N. sankara guiltya*, Swinh.

A curious aberration taken by Dr. Haynes, and kindly presented to me, is very pale sepia-brown on both upper and lower surfaces.

Specimens taken at Sadon, in the extreme N.-E. of Burma, are not typical but intermediate between this form and *guilla*, Swinh.

Paratypes ♂ and ♀, and the aberration noted above, have been deposited in the British Museum.

Neptis cartica cartica, Moore.

The range given for this insect by Brig. Evans in his *Ident. Ind. Butterflies* (2nd Ed.) is 'Sikkim-Assam' and of *N. cartica burmana*, de N., 'Assam-Burma'. I have a large series of both forms before me and find that no specimen of *burmana* has been taken further north than the Karen Hills; whereas the form occurring commonly from Manipur, through the Naga Hills, and N.-E. Burma to the S. Shan States is *N. cartica cartica*, M. *N. cartica burmana*, de N. does not appear to be so common as *N. cartica cartica*, M.

Neptis ananta learmondi, s.sp. nov.

Male. *Upperside* differs from *N. ananta ochracea*, Ev., in having all the yellow markings larger and of a brighter and lighter colour.

Underside. *Forewing* somewhat similar. *Hindwing* with discal band broader, and on its inner edge margined with blue from the dorsal margin to v. 5; the violet post-discal band is narrower, and the subterminal violet band is much broader.

Female. *Upperside* rich clear yellow; darker than the female of *ochracea*, Ev.; subterminal band very broad; somewhat similar in colour to the female of *N. ananta namba*, Tytl., but the subterminal yellow band broader.

Underside very similar to *N. ananta namba*, Tytl., but the subterminal band on hindwing much broader.

Fifteen males and a female were obtained at Loimwe, S. Shan States, by Capt. Learmond after whom I have much pleasure in naming this form.

Neptis ananta namba, Tytl.

A large series was obtained on the Putao Road, N.-E. Burma, in March.

Neptis melba gafuri, s.sp. nov.

In the *Journ. Bomb. Nat. Hist. Soc.*, 1915, p. 508, I erroneously recorded this form from the Naga Hills as *N. antilope*, Leech. I recorded how it differed from Leech's insect, and stated that in view of those differences it might prove to be a race of that species. It is very close to *N. melba*, Evans, and is undoubtedly a race of that form, from which it only differs in the *upperside* being yellow instead of white. The *underside* also differs in being yellow instead of whitish. The female is very similar to the male.

Neptis melba pila, s.sp. nov.

This form is very like *N. melba melba*, Ev., but the colour on the *upperside* is pale yellow and not white. It differs on the *upperside* from *N. melba gafuri*, Tytl., in the yellow colour being much paler; on the hindwing the post-discal yellow band broader. The *underside* is very similar to *N. melba melba*, Ev., but the colour is very pale yellowish.

Five males and two females were obtained at Loimwe, S. Shan States, in April, September, and December. A female was also taken in Bhamo in May. I think it better to consider *N. melba*, Ev., as a distinct species and not as a sub-species of *N. antilope*, Leech, to which insect it is very different in appearance.

♂ ♀ paratypes are deposited in the B. M.

Neptis aspasia, Leech.

A single ♂ was taken at Hthawgaw, N.-E. Burma, in July.

Neptis radha asterastilis, Oberthür.

The type in the Oberthür Collection came from Momeit, N. Shan States. It may be a dry season form. All the specimens I have seen from Burma, except two in the British Museum which agree with the type, are typical *radha*, M. Oberthür's fig. unfortunately accentuates the paleness and makes the ground-colour pale yellow, almost white in places, which is not the case in the type.

I have before me three ♂♂ from N.-E. Burma which are typical *N. radha*, M., and one ♂ from Bhamo, N. Shan States, and close to where the type came from; this is slightly paler on the upperside and may be considered to be *asterastilis*, Obrth.

Neptis zaida thawgawa, s.sp. nov.

Male. *Upperside* somewhat similar to *N. zaida drummondi*, Tyt., but the apical and submarginal spots on forewing are larger. Hindwing with discal band broader, and the submarginal band narrower. *Underside* markings somewhat similar to *N. zaida manipurensis*, Tytl., but the ground-colour is greenish-yellowish tinged with rufous. A single male was taken at Hthawgaw, N.-E. Burma, between 5,000 feet and 8,000 feet, in June.

Neptis beroë, Leech.

A single male was taken at Loimwe, S. Shan States, in April 1928.

This is an interesting capture as this Chinese insect has not previously been recorded from Burma.

Doleschallia bisaltide kara, s.sp. nov.

Male. Rainy season form differs from *D. andamanensis*, Fruh., on the *upperside* in being rather darker; interspaces 2 and 3 in the forewing are concolorous with the rest of the wing and not paler as in that form; the black terminal area darker, extending as far as the tornus; the fulvous bar across the apex narrower and more diffuse, especially the portion in 4 and 5; four subapical white spots instead of three. Hindwing terminal area with two very distinct marginal lines, and two discal black spots large and more distinct.

Underside very dark, and all markings very prominent.

Dry season male above as in the wet season form; below very dark but markings not very prominent.

Female. The dry season form does not differ very much from the Andaman form, types form Car Nicobar, except that the underside is uniform light fulvous.

Vanessa cardui aureum, Linn.

A female was obtained on 16th December, 1924, at Loimwe, close to the Yunnan and Siam borders. It agrees entirely with specimens in the British Museum. It has not previously been recorded from Burma. Brig. Evans probably referred to this specimen in his 'Identification of Indian Butterflies.'

Vanessa urticae chinensis, Leech.

Three males were taken at Hthawgaw in July. This is an interesting capture as it has not been previously recorded from Burma.

Araschnia prorsoides dohertyi, Moore.

A large series was obtained at Hthawgaw, N.-E. Burma, during July-October.

Symbrenthia brabira doni, s.sp. nov.

Male and female. *Upperside* with fulvous markings slightly broader. Specimens taken in May and June (dry season) are very like *S. brabira*, M., taken in June and August. *Underside* very similar, but the ground-colour

is not uniformly yellow and has some paler patches; the black markings are slightly heavier; the post-discal band has no blue centres on the yellow ground.

The wet season form, taken in August, is larger and darker, with narrower fulvous markings, otherwise similar. Types from the Naga Hills. It also occurs at Hthawgaw, N.-E. Burma.

Argynnis laodice indroides, s.sp. nov.

The form occurring in N.-E. Burma differs from the Khasi Hills form, *A. laodice rudra*, M., in the following respects:—

Upperside paler and spots smaller.

Underside of hindwing with subterminal pale pinkish band much broader.

Six males and one female were taken at Hthawgaw, N.E. Burma, in June, 1927.

Argynnis adippe astorica, s.sp. nov.

Male and female smaller and paler than *jainadeva*, M., above and below, but darker and larger than *pallida*, Ev. A large series was taken at Rama, Astor, in August.

Argynnis adippe gyalal, s.sp. nov.

Male. *Upperside* rather similar to *jainadeva*, M. Female. Very like the male, but paler. *Underside* of hindwing with all silver spots large; in interspace 7 the third silver spot from base large and well separated from the fourth; an inner discal row of small silver spots above and close to the discal row.

Three males and a female were kindly given me by Col. Bailey, and were taken at Gyala, S.-E. Tibet, in July.

Argynnis pales hunzaica, s.sp. nov.

Male. *Upperside* with all markings on both wings much smaller and less pronounced than in *A. pales sipora*, M. *Underside* of forewing with no spots on disc of wing; a subapical brown streak pointing to the dorsum; below this there is a submarginal row of five small black spots in 6-2, the spots in 2 and 3 being more inwardly placed. Hindwing ground-colour more extensive and yellowish than in *A. pales sipora*, M.; submarginal spots blackish-red and conspicuous.

The hindwing is of a different shape to *sipora*, M., in *hunzaica* the termen is round; in *sipora*, M., it is rather straight from the apex to vein 4, and then sharply bent inwards to the tornus, giving the wing rather a square look.

Eight males and a female were taken by my native collectors at Mizgah, Hunza, in August.

ERYCINIDAE.

Dodona dipoea dipoea, Hew.

Two males were obtained at Hthawgaw, N.E. Burma. I believe this form has not previously been recorded from Burma.

Dodona dracon, de Nicév.

There are two forms of ♀ differing considerably from one another:—

1st form. A single female taken at Hthawgaw, N.-E. Burma, in September, only differs from the male from the same locality in being larger and all markings on upperside and underside being larger and paler.

2nd form. A single female taken at Bhamo, N. Shan States, in July, and a single female taken at Loimwe, in December, differ from the 1st form in being more ochreous-brown with all the pale markings being tinged with ochreous on the forewing, and very ochreous on the hindwing.

The males vary a good deal according to locality:—

Four males taken near Putao, extreme north of N.-E. Burma, are much smaller and form a separate subspecies.

Eighteen males, taken at Hthawgaw, N.-E. Burma; two males at Bhamo, N. Burma; and ten males taken at Loimwe, S. Shan States, agree with each other fairly closely; the form from Loimwe and Bhamo on the whole has the markings on the underside rather narrower than the form from Hthawgaw; the female from Hthawgaw however, as previously stated, differs from the female from Bhamo and Loimwe, and if this difference is constant the form from Hthawgaw will require a new name.

The type of *D. dracon*, de N., is stated by Fruhstorfer as coming from the Ruby Mines, N. Burma, which is a good deal south of Hthawgaw but much further north than Loimwe.

***Dodona dracon putaoa*, s.sp. nov.**

Male. Much smaller than *D. dracon*, de N. Upperside markings very similar, except on the forewing the spots are fulvous and not white. *Underside* much warmer and darker reddish-ochraceous; markings rather broader.

As previously stated, four males were taken at Putao on the extreme north of N.-E. Burma. The female was not obtained.

***Dodona adonira*, Hew.**

The collective species has been divided into two races, *D. adonira adonira*, Hew., from Sikkim-Bhutan, and *D. adonira argentea*, Fruh., from the Ruby Mines, N. Burma.

Fruhstorfer states that *argentea* differs from the Sikkim form in having a black base to forewing instead of a brown one, a much broader black distal border, and more extensive submarginal band. On underside, the long longitudinal bands are not black but brown; the space between the two submarginal bands and the two basal bands, as well as the subanal region, are covered with broad silvery stripes; also at the costal margin there is a square silvery spot.

I have not seen any specimens from the Ruby Mines where the type came from, and I have no forms which agree *altogether* with Fruhstorfer's description. The nearest locality to the Ruby Mines from which I have received a male is Bhamo, 120 miles away. This might be considered to be typical, except that it has not a black base to the fore and hindwings, but agrees with Sikkim specimens in this respect.

On the other hand I have before me numerous specimens from the Naga and Manipur Hills; from Hthawgaw, 150 miles North of Bhamo; and from the extreme S.-E. of the Shan States, about 300 miles S.-E. of the Ruby Mines, which vary a good deal and may form new subspecies.

Fruhstorfer considered specimens from the Naga Hills and Bernardmyo might be referable to his *argentea*. The Naga Hills are a very long distance from the Ruby Mines, whereas Bernardmyo is so close to the Ruby Mines that there can be no doubt specimens taken there by Doherty are typical; on the other hand specimens from the Naga Hills, as before stated, may form a new sub-species.

The following key will assist in separating the *adonira* from Assam, and the Burma forms of Fruh.

- (A) *Upperside*: base of both wings brown and not as dark as the black margin of the forewing.
- (ai) *Upperside*: very similar to *D. adonira* from Sikkim, but on the *underside* the markings are not quite so black, and the hindwing has the silvery markings of *argentea* but not quite so conspicuous.

***Dodona adonira naga*, s.sp. nov. Naga Hills, Manipur.**

- (aii) *Upperside*: fulvous markings broader and paler than the Sikkim form.
- Underside*: all markings very narrow and fulvous.

***D. adonira argentea*, Fruh. Ruby Mines, Upper Burma.**

- (B) *Upperside*: base of both wings very dark, almost the same colour as the marginal border of forewing.
- (bi) large; markings on underside narrow, and only slightly fulvous; silvery markings well developed.

D. adonira kala, s.sp. nov. Hthawgaw, N.-E. Burma.

(bii) smaller; markings of *upperside* similar. *Underside*: dark bands on both wings broader and markedly fulvous; silver spaces still more developed.

D. adonira learmondi, s.sp. nov. Loimwe, S. Shan States.

Abisara chela amplifascia, s.sp. nov.

The male differs from the typical form from Sikkim in having the white band on both sides of the forewing much wider.

Two males were obtained on the Irang River, Manipur, in March and April; fourteen males at Sadon, N.-E. Burma, in October—December; a male taken in the Abor Hills in July belongs to this form; it is a wet season form and the white band is slightly narrower but still very much broader than the Sikkim form.

LYCAENIDAE.

Allotinus drumila grisea, Riley and Godfrey.

The type was described from a single extreme dry season female from Siam, taken in April. A large series was obtained at Kalaw, S. Shan States, and at Loimwe on the extreme east of the S. Shan States, close to the Siam border.

The male is very close to the typical form, and only differs in the apical pale band not being so pure white. The females, taken at Kalaw in October, belong to the wet season, the ground-colour is brown and not whitish; those caught in November are transitional forms to the dry season form, and one specimen agrees entirely with the type.

Lycaena tseng mandersi, Elwes.

This form only differs from the typical form from China in the colour of the *upperside* which is much brighter.

Six males were obtained at Hthawgaw, N.-E. Burma, and a female in the Bhamo Hills. A male was also obtained in Kalaw, S. Shan States.

The type, a male, was taken at Bansen, Shan States.

Surendra learmondi, sp. nov.

Female. *Upperside* dark blackish-brown, with a large bright purple patch filling the cell and inner half of forewing and cell of hindwing; in one specimen the cell of hindwing has only a little blue towards its apex. *Underside* vinous-brown with purplish-black spots, mostly rectangular. Forewing with two spots in cell, with a costal spot over the outer one; a large spot closing the cell, with a spot above and below it; a post-discal row of six spots in echelon, those in 2, 4 and 6 being placed more outwardly than those in 3, 5 and 7. Hindwing with four basal round spots, followed by a discal and post-discal band composed of peculiarly shaped markings, hard to describe; a well defined lobe at tornus, and a fairly long and stout tail.

Expanse: ♀, 42 m.m.

Two females were obtained at Loimwe, S. Shan States, in June. It is a very distinct species and unlike anything I know.

Spindasis learmondi, sp. nov.

Male. *Upperside* very like *S. nipalicus evansi*, Tytl., but smaller tornal area of hindwing in two specimens, not marked with black spots, one specimen with a maroon spot; inner tail rudimentary, outer tail thicker and mostly maroon with a white tip. *Underside* plumbeous wine-colour; markings on outer margin inclined to be obsolescent, a maroon spot at tornus. This is a very distinct species and unlike anything I know; the *underside* is very distinctive. It agrees with *S. mascinus*, Elw. in having only the outer tail fully developed, the inner one being rudimentary.

Pratapa vidura vidura, Horsfield.

Mr. G. Cooper has taken in Mergui several specimens of a form which agrees with the type from Java. There is a specimen from Lower Burma in the B. M. over the label *P. burmana*, M., and there is also a specimen from Perak over the label *D. v. vidura*, Horsf.

It can easily be distinguished from *D. v. burmana* by the greater development of the orange spot above the inner tail of the hindwing.

It would appear that typical *vidura* extends to the extreme end of S. Burma, and *burmana* is from further north. The type of *burmana* was taken at Moulmein.

Tajuria luculentus luculentus, Leech.

Two males, which appear to be nearer the typical form than to *T. l. nela*, Swinh., were taken at Loimwe.

Tajuria mantra, Feld.

Two females of this rare form were taken at Maymyo in July.

Tajuria yajna ellisi, Evans, ♀.

The female, which I believe is undescribed, is very similar to the ♂, but on the upperside the blue is rather duller, and on the forewing is more extended; underside ground colour much paler.

Biduanda melisa cooperi, s.sp. nov.

Mr. G. Cooper took several specimens of a *meïsa* which differ from typical specimens from further south in having the blue area on the hindwing dark purplish-blue as in *B. m. cyara*, Hew., and not bright shining blue. It appears to be a good race. Type ♂ from Maymyo, Anisakan.

There is a specimen in the B.M. taken by Mr. Godfrey in S.-E. Siam, in April, 1914.

N.B.—The location of the types of *Spindasis learmondi* and *Tajuria yajna ellisi* ♀, omitted by the author, cannot be given as the specimens are not available. The former probably came from Loimwe (G. T.).